DOCUMENT RESUME

ED 279 909 CE 046 707

AUTHOR Norton, Robert E.
TITLE Training Technical and Vocational Teachers. Background Paper.
PUB DATE May 87
NOTE 33p.; Paper presented at the Regional Workshop on Technical/Vocational Teacher Training (Chiba City, Japan, May 11-22, 1987). Attachments A and G contain small print.
PUB TYPE Viewpoints (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Competency Based Teacher Education; *Curriculum Development; Higher Education; *Learning Modules; Staff Development; *Teaching Skills; Vocational Education; *Vocational Education Teachers
IDENTIFIERS National Center for Research Vocational Education

ABSTRACT

To respond to teacher training needs, staff at the National Center for Research in Vocational Education developed an alternative approach to teacher/instructor preparation, called performance-based teacher education (PBTE). This training program was based on competencies required of successful vocational and technical instructors and required the instructor to obtain certain knowledge and demonstrate the essential teaching skills in an actual instructional situation. Through the DACUM (Developing a Curriculum) job analysis procedure, professional competencies required of vocational instructors were identified. With this research base, the National Center developed teacher training materials in the form of individualized learning modules. Each had as its base one or more of the competencies. A total of 132 modules in 14 categories were prepared. Materials were used mainly by training institutions concerned with preservice and inservice teacher/instructor preparation and private and public agencies concerned primarily with staff development or inservice training of instructors. Positive effects were reported on teacher education programs, staff development programs, teachers and instructors, and students and classrooms. (Attachments include a listing of PBTE modules and descriptions of selected PBTE programs.) (YLB)

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TRAINING TECHNICAL AND VOCATIONAL TEACHERS

Background Paper

Prepared for the

Regional Workshop on Technical/Vocational Teacher Training

Sponsored by

Asian Development Bank
Government of Japan

and

Asian and Pacific Skill Development Program

May 11 - 22, 1987

Chiba City, Japan

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by

Robert E. Norton

Senior Research and Development Specialist

THE NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 KENNY ROAD • COLUMBUS, OHIO 43210

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TEACHER TRAINING

The training of teachers[1] has long been recognized as a national, as well as an international, concern. During the 1960s and 1970s, there was general dissatisfaction with many of the teacher/instructor training programs in the United States. Many of these programs tended to emphasize the theory of teaching rather than focusing upon the instructional skills needed to be successful on the job. Some states still lack adequate numbers of vocational instructors who possess both the technical and professional skills needed to be a successful instructor.

Many postsecondary training institutions are recruiting highly qualified technical experts from industry as part-time or full-time instructors. Unfortunately, many of these persons are thrust into instructional roles with very little, if any, professional preparation. When these experts do not possess the teaching skills required to be successful, some excellent potential instructors quit their jobs out of sheer frustration. Most of our vocational, technical, and industrial training centers have found that "teaching skills require just as much care and fine tuning as technical and mechanical skills."

On the international scene, it is also quickly apparent that the training of teachers is high on the list of factors needing attention if the human resources of most countries are to be effectively utilized. Two brief citations will serve as examples of this need:

- The members of the Technical Committee of APSDEP, meeting in Manila in July 1979, agreed that the "training of key personnel, particularly trainers and instructors, was an area of primary concern. The representatives of the governments expressed a willingness to share whatever expertise and experience they possess in regard to training systems, materials, and facilities through APSDEP."[2]
- "A priority amongst the needs which ILO is called upon to satisfy is the need for training at all levels. Whilst Asia and the Pacific possess the manpower required for carrying out the tasks of economic and social development, they suffer from a shortage of trained people and training expertise without which their human resources cannot be effectively utilized."[3]

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1. The terms instructor, trainer, and teacher are considered to be synonymous in this paper.

2. H. S. N. Murthy Rao, Regional Training of Trainer Trainers on a TCDC Basis (Madras, India: Advanced Training Institute, October 1983).

3. Andre Aboughanem, Training of Trainers in Asia and the Pacific (Turin, Italy: International Center for Advanced Technical and Vocational Training, February 1982).

Granted that there is a worldwide need for effective instructor training programs, what are some of the specific instructor training needs that must be addressed? Information available from both research and practical experience suggests at least the following specific needs:

1. The need for more, and more competent, instructors in many occupational areas. The shortage of qualified instructors in some occupational areas is a severe handicap to the social and economic development of some countries.

2. The need for instructor training programs that are based on the actual job requirements of the trainers and instructors. Too many courses and workshops for instructors are still emphasizing theoretical concepts in hopes that the trainees will, largely on their own, be able to apply those concepts to practical instructional situations.

3. The need for instructor evaluations that are performance-oriented rather than knowledge-oriented. Most often, instructor trainers have assessed instructors' teaching skills using primarily cognitive and norm-referenced assessment methods. There is a false assumption inherent in that approach, however: The instructor who knows about the teaching process will not automatically be able to perform effectively in the classroom and shop.

4. The need to provide instruction that can be tailored to the individual needs of the instructor in training. Educators have long been aware of the need to individualize the learning process in order to accommodate each trainee's needs. While instructor trainers often tell the instructors they must individualize instruction for their trainees, their own classes are all too often conducted in a large-group, lockstep manner.

5. The need to provide instruction that allows for a variety of realistic learning experiences and options. Different instructors have different learning styles and learning preferences; hence, it is important to provide for alternative learning experiences whenever possible.

6. The need for instruction that provides immediate and frequent feedback to the learner. The instructor needs to know how well he or she is progressing toward achieving the necessary teaching skills on a regular, almost daily, basis.

7. The need for instruction that holds both the instructor trainer and the instructor trainee accountable. If both persons are important to the learning process, as most would agree, then they obviously share responsibility for the learning that should occur.

8. The need for instruction that is both cost-efficient and maximally effective. Training is costly, so program effectiveness and efficiency need to be enhanced by focusing on actual requirements of the instructor's job--those competencies essential to the training/teaching function.

Given the needs outlined, it is apparent that the conventional approach to instructor training will not suffice. Many traditional and time-honored practices need to be replaced by a more scientific and systematic approach to instructor training.

To address these needs and other issues related to the training of technical and vocational teachers, the remainder of this paper will address the following major topics:

- Development of PBTE as a response
- Research on teacher competencies
- Development of teacher training curricula
- Alternative teacher training schemes and modules
- Effects of competency-based teacher training
- Occupational competency testing of teachers

Development of PBTE as a Response

To respond to these demanding teacher training needs, staff at the National Center for Research in Vocational Education developed, with federal government support, an alternative approach to teacher/instructor preparation called performance-based teacher education (PBTE).

PBTE is an approach to instructor preparation in which (1) the training program is based on the competencies (specific job tasks) required of successful vocational and technical instructors and (2) the instructor must not only obtain certain knowledge but is also required to demonstrate the essential teaching skills in an actual instructional situation.

There are five essential elements and seven desirable characteristics[4] that serve to establish the operational framework for any PBTE program. The essential elements are as follows:

- Competencies to be achieved by the instructors are carefully identified, verified, and made public in advance.
- Criteria to be used in assessing achievement and the conditions under which achievement will be assessed are explicitly stated and made public in advance.
- Assessment of competency takes the instructors' knowledge and attitudes into account but depends upon actual performance as the primary source of evidence.

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4. The essential elements and desirable characteristics presented here are adapted from Achieving the Potential of Performance-Based Teacher Education Recommendations (Washington, DC: American Association of Colleges for Teacher Education, 1974).

- The instructional program provides for the individual development and evaluation of each of the competencies specified.
- Trainees progress through the instructional program, at their own pace, by demonstrating the attainment of specified competencies.

The additional elements--the desirable characteristics--associated with most PBTE programs may include any or all of the following:

- Instruction is individualized to the maximum extent possible.
- Learning experiences are guided by immediate feedback.
- Emphasis is on meeting exit requirements.
- Instruction is individually paced rather than time-based.
- Instruction is, to a considerable extent, field-centered.
- Instruction is often modularized and uses materials with both required and optional learning activities--to achieve flexibility and provide for various learning styles.
- The program as a whole is carefully planned and systematic.

Research on Teacher Competencies

The first question that needed to be answered was, What teaching skills does a person need to possess in order to be an effective vocational-technical teacher? Under the sponsorship of the U.S. Office of Education, the National Center began work in 1967 to determine the professional competencies required of vocational instructors. Approximately 1000 vocational instructors, instructional supervisors, and teacher trainers were involved in the initial identification and verification of 384 job tasks considered important for vocational instructors in the various occupational areas of concern. The 384 job tasks were then clustered into ten categories representing major areas of instructional responsibility.

The initial teacher competency identification research base has been added to four times since 1974. In 1979-81, research was conducted using the DACUM (Developing A Curriculum) job analysis procedure to identify the competencties needed by teachers who work with students having some type of special or exceptional need (e.g., handicapped, disadvantaged).

During 1981-82, two additional areas of concern were again addressed using the DACUM job analysis procedure. The areas researched included the competencies needed by teachers who needed to help their students further develop their basic skills (reading, writing, speaking, computing) and the competencies needed by teachers who were wanting to implement competency-based education.

Finally, in 1985, research was conducted to identify and nationally verify the competencies important to successful teachers of adults. Again, the DACUM process was utilized.

Development of Teacher Training Curricula

Given this research base, the National Center, under sponsorship of the U.S. Office of Education, initiated development of a comprehensive set of curricular materials that would meet the training needs of vocational instructors and incorporate the essential elements of PBTE. The materials that resulted from this endeavor are products of a sustained research and development effort that has focused upon the actual preparation needed by persons who expect to teach with optimum effectiveness.

Nature of materials. The curricular materials are in the form of individualized learning packages, or modules, each of which has as its base one or more of the competencies identified and nationally verified. By basing the modules on the identified competencies, there is assurance that the objectives of the modules represent competencies actually needed by vocational instructors, at both the secondary and postsecondary levels, and in all occupational areas.

Each module provides learning experiences that integrate theory and application; each culminates with criterion-referenced assessment of the instructor's performance of the specified competency. The materials are designed for use by individuals or groups of teachers/instructors working under the direction and with the assistance of instructor trainers or other professional staff acting as resource persons.

The design of the materials provides considerable flexibility for planning and conducting performance-based preservice and inservice instructor training programs to meet a wide variety of individual needs and interests. The materials are intended for use by universities and colleges, state departments of education, postsecondary institutions, local education agencies, and others responsible for the professional development of vocational teachers or instructors.

Module development. The module development process was structured to ensure maximum involvement of persons representing all occupational areas and who were actively engaged in vocational instructor preparation. Each module was originally developed in cooperation with vocational instructor trainers at Oregon State University, Corvallis, and University of Missouri-Columbia. National Center staff also worked on-site with the module writing teams.

A system of development, review, and revision was followed by the writing teams at each of these sites during the initial module development. Following development of each module to the satisfaction of the faculty at the site, the module was then forwarded to the other university for review and critique by its faculty. Each module also underwent review and critique by National Center staff. Then a synthesis of all faculty and staff reviews was developed, and the module was revised by National Center staff.

Preliminary testing and revision. Initial testing of the PBTE materials was carried out during 1973-74 at Oregon State University, University of Missouri-Columbia, and Temple University. Each of the modules was used by a

minimum of ten preservice and/or inservice vocational instructors at one or more of the test sites. Reaction forms were completed by each instructor for each module used and by each instructor trainer (resource person) for each module he or she administered. In addition, in-depth taped interviews were conducted to clarify and gain additional feedback from instructors and resource persons for a sampling of the modules tested. Several individual modules and entire categories of modules were also reviewed and critiqued by independent consultants and subject matter experts during this phase of the project.

Using the inputs from instructors, resource persons and consultant reviews, each of the modules underwent a major revision of content and format. The typical instructional sequence for National Center modules, which reflects the revised format, is illustrated in Figure 1. This major revision was initiated by National Center staff during the summer of 1974, with completion occurring in the spring of 1976.

Advanced testing. Initially, three advanced testing sites were selected and testing began during the winter of 1975. During the spring and summer of 1975, advanced testing was also initiated at four self-sponsored sites. In the fall, ten additional advanced testing sites were added through U.S. Office of Education sponsorship of a National Institute for PBTE.

From 1975 through 1976, advanced testing of the materials was conducted at the 17 sites, representing wide geographic areas and settings as well as several differing PBTE program structures. Feedback was gathered from each trainee and each resource person using the modules to further improve the materials and to document their effectiveness. More than 2,500 preservice and inservice instructors and 250 instructor trainers and other resource persons participated in the testing and provided feedback to the National Center. This user feedback provided information concerning the characteristics of the user and how well the materials served his/her needs.

Advanced testing data showed the modules to be highly effective in developing the specified competencies in both preservice and inservice training programs. Pre/post-estimates of instructor trainee performance showed increases in ability to perform the specified competency for each of the 100 modules. Furthermore, these increases were statistically significant at the .01 level of confidence for 98 of the 100 modules. Further, the subjective reactions of both instructor trainers and trainees regarding the quality and utility of the materials were highly positive.

Refinement, publication, and dissemination. The National Center completed an agreement for commercial publication of the PBTE materials in mid-1976. At that time, the publisher, American Association for Vocational Instructional Materials (AAVIM), and National Center staff jointly determined the final format of the materials. The publisher initiated incremental release of published materials in March 1977, with release of the last materials occurring in summer 1978.

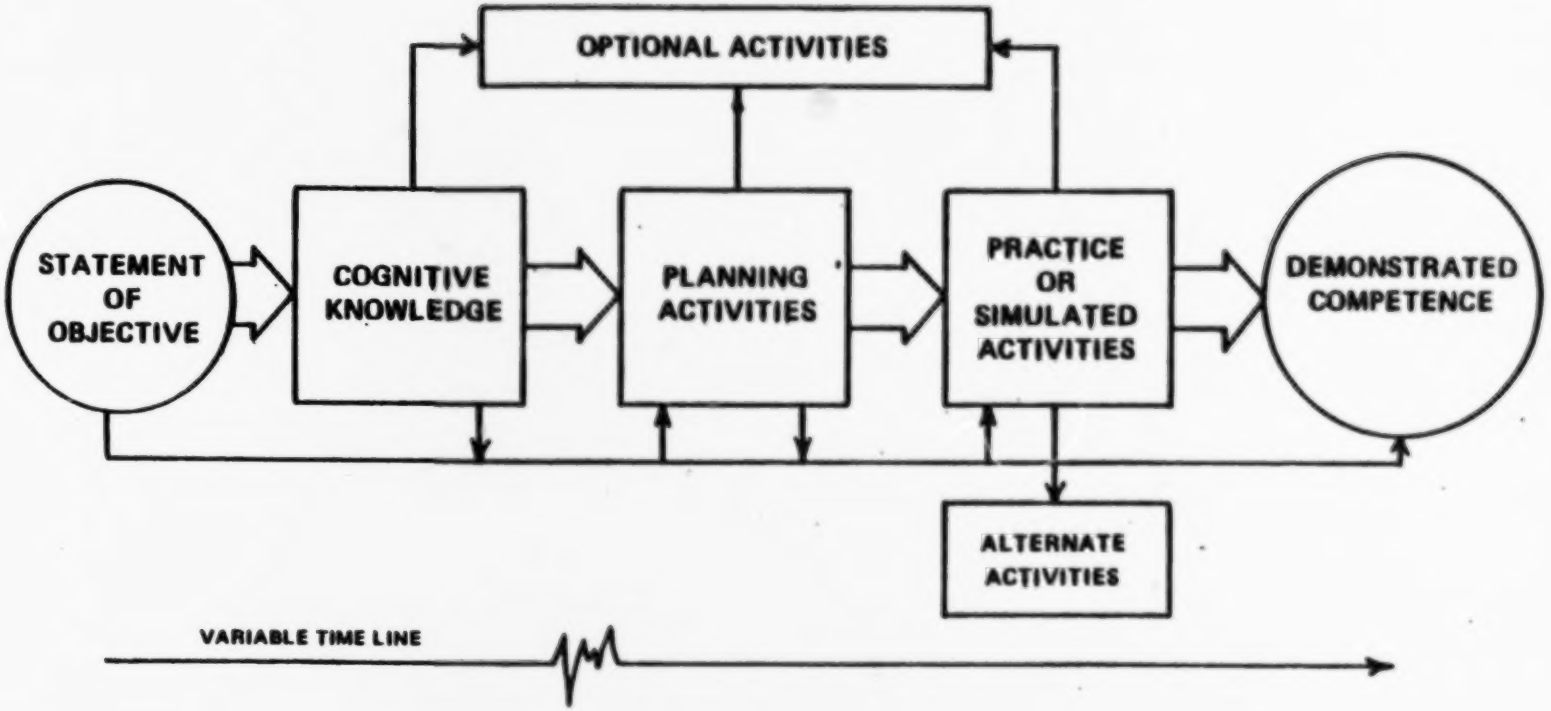

Figure 1. Typical Instructional Sequence for National Center Modules

The National Center's curricular materials consisted initially of 100 PBTE modules, clustered into 10 categories, and related supportive materials. Since 1982, 32 additional modules in 4 additional categories have been prepared. See Attachment A for a complete listing of the 14 categories, 132 modules, and 4 support documents.

Joint dissemination activities have been and continue to be carried out by the National Center, by the publisher, and through federal, state, and regional sponsors to provide orientation and training for effective implementation and use of the PBTE curricular materials.

In a performance-based training program, the resource person (instructor trainer, instructional supervisor, staff development coordinator, etc.) has a unique and essential role to perform. This role, which includes the functions of serving as advisor, facilitator, and assessor, is very different from the traditional roles performed by instructor trainers and staff development leaders.

The National Center's field-testing and training experience with many different educational institutions repeatedly reinforced the need for the adequate training of PBTE users. Hence, both the developer and publisher strongly recommend that institutions or other agencies or countries planning to use these materials arrange for the provision of adequate training to ensure the most effective use of the materials and concepts.

In a recent article entitled "The Importance of Teacher Training," Henry W. Puzio, Training Officer for Lincoln Technical Institute in Union, New Jersey, stated:

> In early 1986, Lincoln schools decided to implement the Performance-Based Teacher Education Program for the development and training of newly hired instructors. Further, it is used as a tool for refining the skills of the veteran instructor.
>
> The key to the program's success is the resource person. It is important that this individual be totally familiar with the PBTE training process, motivated and committed to the goals and objectives of the program. It is also important that the instructional staff understands the value of PBTE and the benefits that can be derived from it.
>
> In the final analysis, a viable teacher training program is extremely beneficial to the success of our schools and our students.[5]

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5. Henry W. Puzio, "The Importance of Teacher Training," Career Training, Journal of the National Association of Trade and Technical Schools, Vol. 3, No. 3 (March 1987), p. 26.

Alternative Teacher Training Schemes and Models

Full-scale implementation, as well as partial implementation, of the PBTE concepts and materials has occurred at many public and private agencies across the United States. Vocational teachers and instructors, industrial trainers, staff development coordinators, local and state supervisors, and many others involved in the professional preparation of persons for teaching roles at all levels are using the materials.

In addition, more than 3,000 different agencies and over 1,500 individuals have purchased the modules, including over 1,700 educational agencies and over 425 business and industrial firms. The primary users have been colleges and universities, which represent 56 percent of the total sales.

All 50 states, five U.S. territories, 11 Canadian provinces, and 40 other foreign countries also have purchased the materials. Because of the international demand for the materials, distributorships have been established in the United Kingdom, Australia, and Pakistan.

The materials are being used mainly by (1) training institutions concerned with preservice and inservice teacher/instructor preparation and (2) private and public agencies concerned primarily with staff development or the inservice training of instructors.

Teacher education use. As one might expect, the most extensive use of PBTE concepts and materials in the United States is occurring in the colleges and universities that have teacher preparation as one of their major responsibilities. Of the 1,700 educational agencies that have ordered the modules, 425 are colleges and universities. Some of these institutions use the materials primarily in their preservice programs, while others use them more in their inservice courses and workshops.

Major use has occurred in what might be described as a "blending" approach whereby selected modules are substituted for specific units of a given course. Extensive use has also occurred in "total course substitution" approaches whereby one or more courses are taught in a performance-based manner using a cluster of modules as an alternative to lectures. In several institutions, all the professional preparation required of teachers is offered through a "total program conversion" to the use of PBTE concepts and materials.

Staff development use. The use of PBTE materials by organizations other than colleges and universities for staff development or inservice training represents 42 percent of total module sales. The major users in this category are as follows:

- Public and private secondary schools
- Public and private postsecondary institutions (two-year)
- State education agencies

- Business, industry, and labor organizations
- Noneducational government agencies

In the over 800 secondary schools and the over 600 postsecondary institutions purchasing the materials, the modules are used in staff development programs run by the institution itself. Frequently, they are used with part-time, as well as full-time, instructors to help them acquire critical teacher "survival skills," and in some states to meet certification requirements.

Most of the 50 state departments of education have purchased either sets of the modules for placement in area vocational school staff libraries and/or quantities of individual modules for use in local-, regional-, and state-level teacher inservice education workshops.

In addition to the educational agencies, more than 450 businesses, industries, and labor groups are using the modules as part of their instructor training programs. The materials have been purchased by such well-known companies as Caterpillar Tractor, General Electric, International Business Machines, Kodak, Mobil Oil, Sears and Roebuck, Union Carbide, and United Airlines. Among the noneducational government users are the U.S. military, state and federal corrections and law enforcement agencies, and the U.S. Department of Agriculture's forest and soil conservation service.

An Overview of Selected PBTE/CBSD Programs

Brief descriptions of some of the applications of PBTE/CBSD principles and materials in different types of institutions are presented here.

- PBTE in Colleges/Universities

  Temple University's Program VITAL (Vocational Intern Teaching Applied Learning)

  Initial vocational certificate requires completion of 30 PBTE modules. Senior teacher educators, field resource persons, resident resource persons, inservice teachers at secondary schools, and intern teachers participate in the program. See Attachment B for more detail of this long standing program that has served as a model for many others.

  Indiana University of Pennsylvania's Center for Vocational Personnel Preparation

  This field-based performance-based vocational teacher education program is based on Temple's model and serves both preservice and inservice vocational teachers. All the PBTE modules are used.

  University of Central Florida

  PBTE is used for inservice and preservice teachers, with an 85 percent inservice focus. Geographical area served includes rural, sparsely

populated counties, and the individualized program is adaptable to a field-based setting. Both undergraduate and graduate level programs use the modules. See Attachment C for more information about this program.

University of Alaska, Juneau

PBTE modules are used in the vocational education master's degree program, with a minimum of nine credit hours required in PBTE. The program serves teachers in all areas of this vast state through the use of resident resource persons and university-based field resource persons.

- CBSD in Community Colleges/Industry

Albuquerque Technical/Vocational Institute

PBTE has been integrated into their institutional Professional Development Plan. All teachers hired must demonstrate proficiency in 41 selected modules. The University of New Mexico's Department of Secondary and Adult Education works cooperatively with the Institute. See Attachment D for more information on how PBTE concepts and materials are used by this Institute.

Bougainville Copper LTD, Papua New Guinea

This staff development program for industry trainers effectively uses the PBTE modules. Adelaide College of the Arts and Education, South Australia, provides the field-based program, adapting to the challenge of geographical distances. See Attachment E for more information about this distance education program.

- Statewide Programs

Arkansas

Certification requirements were established in April 1983 for all post-secondary vocational instructors. PBTE modules are the basis for the program, and all instructors must eventually acquire or demonstrate the competencies for the senior instructor level. A career ladder and merit pay system is an integral part of this statewide professional development program. Participation of instructors in this program is a condition of employment. Persons employed must progress as follows:

Provisional Instructor	⇨	Instructor	⇨	Senior Instructor	⇨	Master Instructor
11 modules required		31 modules required		33 additional modules		36 additional modules

Instructors who desire to remain at the Senior Instructor level may do so. Advancement to each higher grade also requires successful teaching experience and additional technical work experience.

Washington

The State Board for Community Colleges established a performance-based vocational teacher education plan for all its postsecondary institutions in 1979. An inservice training program to prepare resource persons was designed and implemented.

- Adoption by National Associations

NATTS (National Association of Trade and Technical Schools)

In 1979, NATTS recommended to its 1,000 member institutions an instructor training program of 21 PBTE modules, selected to provide the core of teaching skills needed in program planning, instructional planning, execution, evaluation, and management.

NATTS believes that professional development is an ongoing process; one that takes time and energy. As part of the NATTS commitment to the professional development process, three levels of recognition had been established for instructors at member schools who have completed PBTE modules.

Level I

Any instructor whose school has verified that the instructor has successfully completed 16 PBTE modules--including 11 modules from the 21 recommended by NATTS--will receive a Level I Professional Achievement Award from NATTS.

Level II

An instructor whose school has verified that the instructor has successfully completed 25 PBTE modules--including 11 modules from the 21 recommended by NATTS--will receive a Level II Professional Achievement Award from NATTS.

Level III

Any instructor whose school has verified that the instructor has successfully completed 40 PBTE modules--including 11 modules from the 21 recommended by NATTS--will receive a Level III Professional Achievement Award from NATTS.

Effects of Competency-Based Teacher Training

Educators frequently ask questions such as the following: What evidence is there that PBTE works any better than (or as well as) conventional teacher education and staff development programs? Why should we change to the PBTE approach unless there is significant evidence that it is better than what we are now doing? These are fair and legitimate questions. While the research needed to answer those questions conclusively is complex, expensive, and fraught with difficulty, some answers are now becoming increasingly clear.

Four types of positive effects of PBTE have been reported by Adams, MacCay, and Patton[6] and by Bill Weaver (NATTS study) as follows: (1) effects on teacher education programs, (2) effects on staff development programs, (3) effects on teachers and instructors, and (4) effects on students and classrooms.

Teacher education. Traditional teacher education has been content-based, time-based, group-paced, focused on the needs of the group, course-oriented, classroom-based, norm-referenced, instructor-centered, textbook-focused, based on general objectives, and has relied on subjective assessment criteria.

However, those who are being trained as instructors need to be able to apply what they learn to the situations they encounter, and their training must be based on actual job requirements rather than theory. Evaluations should be based on their performance in those situations. In addition, student instructors need to experience individualized instruction themselves in order to make use of its principles in their own teaching. PBTE is meeting these needs.

Teacher training institutions using PBTE cannot easily fit students into a general pattern. PBTE's emphasis is more on what abilities the students demonstrate at the end of the program than on what may be required for their entrance into the institution. Students are allowed to take varying amounts of time to attain mastery, and opportunities are given for them to "test out of" some competencies and proceed with the modules for the skills they need to work on.

According to the Adams study, PBTE has been especially effective in changing teacher education programs. It has accomplished the following:

- Increased the accountability of teacher training programs.
- Increased instructors' access to teacher training by providing self-contained instruction especially useful in rural and/or isolated areas.
- Increased the flexibility of teacher training in terms of getting the right training to the right instructor at the right time.
- Increased the productivity of teacher training programs by shortening the time required to certify vocational teachers.
- Reduced the variability and added cohesiveness to the content of vocational instructor training curricula through standardization of the skills vocational instructors are required to master.
- Significantly changed the role of the university trainer from a university-based classroom lecturer to a field-based learning facilitator working with instructors on a small-group and one-to-one basis.

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6. Kay A. Adams, Brenda MacKay, and Michael Q. Patton, The Impact of the National Center's Performance-Based Teacher Education Curriculum (Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1980).

Staff development. The number of community and junior colleges in the United States grew from 678 in 1960 to 1,230 in 1975. These two-year institutions serve an increasing number of students from nontraditional backgrounds, including unemployed, disabled, senior citizens, women taking courses that have not been traditional for women (i.e., trades and technology), parolees and part-time students. The prescribed curricula may be irrelevant to these students. The influx of nontraditional students has pointed to the need for nontraditional instruction. CBSD helps the staff of these institutions respond to the needs of a changed student body.

In recent years the emphasis on vocational/technical education in post-secondary institutions has increased. Many instructors in these two-year schools are hired directly from industry and have expertise in a specific area, but need to acquire a variety of teaching competencies. PBTE/CBSD is effective for training these instructors and can help them immediately.

In 1982, NATTS surveyed those who had attended CBSD workshops. Of responses from 77 institutions, 71.4 percent had established CBSD programs, and of those, 45.4 percent had mandatory requirements for at least some of the teachers. A total of 64.3 percent felt their programs to be successful or very successful. Those with successful programs stated emphatically that the teaching staff had gained greater awareness and knowledge of teaching techniques. More than half noted a decrease in students' complaints about teachers.

More than 450 noneducational agencies, in the areas of business, industry, labor, government, and the military, have purchased PBTE modules and find them an efficient way to train personnel. For example, the nuclear facility in Seabrook, New Hampshire, has two staff development meetings a month, making use of the modules. Neal Wiggin of the facility commented, "Developing instructor competency is as important as developing operation and technical quality."

Teachers/instructors. Traditionalists insist that teaching is greater than the sum of its parts and worry that PBTE may reduce teaching to a series of sometimes trivial operations. Some say that working with modules is dull and neglects human interaction. Such critics forget that many aspects of traditional training of teachers were dull for both the educator and the student. Some educators prepared lectures and tests in isolation. In their new roles as resource persons they tutor, facilitate, advise, counsel, and assess. They spend less time preparing lectures, writing and grading tests and conducting large-group discussions. Many find more human interaction in a PBTE program than in a traditional one.

The transition is not an easy one for educators who have already developed their own methods and styles. They have to change the way they manage their time and resources in order to match the individual needs of their students with resources and keep records of individual progress. But their comments show that they find PBTE effective and satisfying.

The effects of PBTE on vocational teachers and instructors cited by Adams are as follows:

- Increased competency in teaching, especially in the areas of instruction planning, organizing content into units of instruction, student reinforcement, individualizing instruction, and student performance evaluation.
- Increased instructors' responsibility for their own learning and their ability to be self-evaluative.
- Increased the instructors' convenience in obtaining certification.
- Increased instructors' personal contact with instructor training faculty.
- Increased instructors' confidence in themselves, because they are more certain of what they can do.

Classrooms and students. Students and their classrooms have also been affected by PBTE in the following ways:

- Improved communication between training institutions and local school districts.
- Increased use of competency-based techniques by teachers with their own students because instructors teach the way they are taught.
- Improved performance of local school administrators in evaluating teachers.

Reactions of Users

Many administrators and resource persons who have used the PBTE concepts and materials have offered very positive comments about their effects on both teachers and their students. The following verbatim unsolicited comments are presented to share the types of reactions that have been received from many users at various institutions throughout the U.S. and a couple of international users.

"All teachers feel that not only have they benefited from the program, but so have the students." (Catherine Vatterott, St. Louis Education Center)

"The entire program has measurably improved our teacher performance--so much that our student success levels have risen from past averages." (Stanley Warshaw, Rutland, Vermont)

"The PBTE modules are the best source of teacher education pedagogy content available." (Edward Brower, Coordinator, College of Education, Temple University)

"I purchased a full set of modules from your Australian distributor and have used them extensively in international work in Southeast Asia . . . most valuable . . . a major contribution." (G. R. Meyer, Continuing Education, Macquarie University)

"My course in curriculum was greatly enhanced through use of PBTE materials." (Dan Fahrlander, National Taiwan Normal University)

"I believe the modules are excellent." (Roger Hess, Bell & Howell Education Group, Inc.)

"Recent workshop at Southern Illinois University a success . . . confirmed the value of competency-based approach in teacher preparation." (Richard Bortz, Occupational Education, Southern Illinois University at Carbondale)

"Excellent PBTE series." (Home Builders Institute)

"All modules are extremely well-written and organized. PBTE is an excellent vehicle for providing a structured, systematic program . . . Recommend full implementation to any vocational education institution . . . Many can be used in industrial training." (James Gordon, Senior Training Analyst, Alabama Power)

"Impressed with the quality, style, and relevancy." (Betty Poindexter, Austin E. Walker Center for Career Education)

". . . excellent work in developing teacher education packages. I intend to use them consistently." (John Nevins, Director, Occupational Education, State College at Westfield, Massachusetts)

"Very worthwhile." (Floyd Rasmussen, College of Hair Design, Lincoln, Nebraska)

"The CBSD modules are self-contained and well-planned. Workshops offer specific information and ideas on how to tailor the presentation of the modules to meet specific needs. Outstanding combination." (James Scapillato, Washington Technical Institute, Seattle, Washington)

"The new instructors feel more confident in the classroom. The more experienced teachers like being reminded of some of the techniques or 'tricks' they may have forgotten over the years. All teachers feel that not only have they benefited from the program, but so have the students." (Catherine Vatterott, Vatterott & Sullivan Educational Centers. St. Louis, Missouri)

". . . the answer to our upgrading instructors' capabilities." (Robert F. Sweitzer, Airco Technical Institute, Pittsburgh, Pennsylvania)

"The entire program has measurably improved our teacher performance--so much that our student success levels have risen from past averages." (Stanley Warshaw, U.S. School of Professional Paperhanging, Rutland, Vermont)

"The two most attractive aspects of this program are its flexibility in design so that I am able to utilize this program to suit the particular needs of each faculty member and its flexibility in time demands so that much of the preparation exercises are done IN THE CLASSROOM SITUATION which does not unduly encumber their outside classroom preparation time." (Jeanne Semer-Purzycki, Travel School of America, Newton Centre, Massachusetts)

Occupational Competency Testing of Teachers

The National Occupational Competency Testing Institute (NOCTI) is a nonprofit educational consortium of states that has developed high-quality teacher occupational competency examinations in over 40 fields of employment. The NOCTI exams for each occupation contain two parts: a written test that is concerned with knowledge of the occupation; and a performance test that examines selected manipulative skills of the occupation.

The NOCTI tests do not measure teaching skills. Instead they focus on the technical knowledge, psychomotor skills, understandings, and analytical abilities that are normally required of an individual for successful practice in the occuaption. Currently, 46 states and the District of Columbia support this important technical competency testing program for teachers. (See Attachment F for an explanation of how Occupational Competency Testing operates at one institution.)

Summary

The National Center's PBTE materials have been widely adopted and have had a marked impact on vocational instructor training and staff development programs. The PBTE materials are more widely utilized than any other of the many products produced by the National Center for Research in Vocational Education.

It is believed that the availability of high-quality, research-based, and field-tested materials, coupled with the logical promise of the essential elements and desirable characteristics of PBTE programs, have significantly increased the responsiveness of teacher and instructor training programs to the needs of their clientele. It is known that the cooperative development procedures, extensive field testing, and the numerous institutional, state, regional, and national workshops conducted to train resource persons contributed significantly to the dissemination of the concepts and materials and implementation of PBTE programs.

There is considerable evidence that PBTE programs are having a long-term impact on improving the quality and competence of vocational teachers and instructors. By providing a flexible and more individualized program, PBTE has enabled teachers to progress at their own best rate to achieve mastery of the desired competencies. It has also increased the productivity of some teacher education programs by shortening the time required for certification.

Since the National Center's PBTE efforts have met with success, it will not surprise anyone to learn that additional materials are being developed using the same basic research, development, and dissemination methodology. Work in performance-based teacher education has continued through the development of the four new categories of PBTE modules, as well as through the revision of the original 100 modules to update their content and improve their graphics.

A multistate consortium effort is also supporting the development of competency-based modules designed specifically for the preparation of local administrators of secondary and postsecondary vocational programs. See Attachment G for a list of the 34 modules in ten categories and 11 guides that are available for preparing vocational leadership personnel. Development work has also been initiated for developing performance-based materials specifically designed for instructors within industry.

PBTE concepts and materials provide a promising alternative to the more conventional methods of instructor and leadership personnel training. We at the National Center stand ready and anxious to help persons in any country or region who wish to receive training in the implementation of PBTE concepts and materials, technical assistance in program design and operation, or assistance in the translation and/or adaptation of materials for use in any appropriate instructional environment.

ATTACHMENT A

Titles of the National Center's Performance-Based Teacher Education Modules

Category A: Program Planning, Development, and Evaluation
- A-1 Prepare for a Community Survey
- A-2 Conduct a Community Survey
- A-3 Report the Findings of a Community Survey
- A-4 Organize an Occupational Advisory Committee
- A-5 Maintain an Occupational Advisory Committee
- A-6 Develop Program Goals and Objectives
- A-7 Conduct an Occupational Analysis
- A-8 Develop a Course of Study
- A-9 Develop Long-Range Program Plans
- A-10 Conduct a Student Follow-Up Study
- A-11 Evaluate Your Vocational Program

Category B: Instructional Planning
- B-1 Determine Needs and Interests of Students
- B-2 Develop Student Performance Objectives
- B-3 Develop a Unit of Instruction
- B-4 Develop a Lesson Plan
- B-5 Select Student Instructional Materials
- B-6 Prepare Teacher-Made Instructional Materials

Category C: Instructional Execution
- C-1 Direct Field Trips
- C-2 Conduct Group Discussions, Panel Discussions, and Symposiums
- C-3 Employ Brainstorming, Buzz Group, and Question Box Techniques
- C-4 Direct Students in Instructing Other Students
- C-5 Employ Simulation Techniques
- C-6 Guide Student Study
- C-7 Direct Student Laboratory Experience
- C-8 Direct Students in Applying Problem-Solving Techniques
- C-9 Employ the Project Method
- C-10 Introduce a Lesson
- C-11 Summarize a Lesson
- C-12 Employ Oral Questioning Techniques
- C-13 Employ Reinforcement Techniques
- C-14 Provide Instruction for Slower and More Capable Learners
- C-15 Present an Illustrated Talk
- C-16 Demonstrate a Manipulative Skill
- C-17 Demonstrate a Concept or Principle
- C-18 Individualize Instruction
- C-19 Employ the Team Teaching Approach
- C-20 Use Subject Matter Experts to Present Information
- C-21 Prepare Bulletin Boards and Exhibits
- C-22 Present Information with Models, Real Objects, and Flannel Boards
- C-23 Present Information with Overhead and Opaque Materials
- C-24 Present Information with Filmstrips and Slides
- C-25 Present Information with Films
- C-26 Present Information with Audio Recordings
- C-27 Present Information with Televised and Videotaped Materials
- C-28 Employ Programmed Instruction
- C-29 Present Information with the Chalkboard and Flip Chart

Category D: Instructional Evaluation
- D-1 Establish Student Performance Criteria
- D-2 Assess Student Performance: Knowledge
- D-3 Assess Student Performance: Attitudes
- D-4 Assess Student Performance: Skills
- D-5 Determine Student Grades
- D-6 Evaluate Your Instructional Effectiveness

Category E: Instructional Management
- E-1 Project Instructional Resource Needs
- E-2 Manage Your Budgeting and Reporting Responsibilities
- E-3 Arrange for Improvement of Your Vocational Facilities
- E-4 Maintain a Filing System
- E-5 Provide for Student Safety
- E-6 Provide for the First Aid Needs of Students
- E-7 Assist Students in Developing Self-Discipline
- E-8 Organize the Vocational Laboratory
- E-9 Manage the Vocational Laboratory
- E-10 Combat Problems of Student Chemical Use

Category F: Guidance
- F-1 Gather Student Data Using Formal Data-Collection Techniques
- F-2 Gather Student Data Through Personal Contacts
- F-3 Use Conferences to Help Meet Student Needs
- F-4 Provide Information on Educational and Career Opportunities
- F-5 Assist Students in Applying for Employment or Further Education

Category G: School-Community Relations
- G-1 Develop a School-Community Relations Plan for Your Vocational Program
- G-2 Give Presentations to Promote Your Vocational Program
- G-3 Develop Brochures to Promote Your Vocational Program
- G-4 Prepare Displays to Promote Your Vocational Program
- G-5 Prepare News Releases and Articles Concerning Your Vocational Program
- G-6 Arrange for Television and Radio Presentations Concerning Your Vocational Program
- G-7 Conduct an Open House
- G-8 Work with Members of the Community
- G-9 Work with State and Local Educators
- G-10 Obtain Feedback about Your Vocational Program

Category H: Vocational Student Organization
- H-1 Develop a Personal Philosophy Concerning Vocational Student Organizations
- H-2 Establish a Vocational Student Organization
- H-3 Prepare Vocational Student Organization Members for Leadership Roles
- H-4 Assist Vocational Student Organization Members in Developing and Financing a Yearly Program of Activities
- H-5 Supervise Activities of the Vocational Student Organization
- H-6 Guide Participation in Vocational Student Organization Contests

Category I: Professional Role and Development
- I-1 Keep Up-to-date Professionally
- I-2 Serve Your Teaching Profession
- I-3 Develop an Active Personal Philosophy of Education
- I-4 Serve the School and Community
- I-5 Obtain a Suitable Teaching Position
- I-6 Provide Laboratory Experiences for Prospective Teachers
- I-7 Plan the Student Teaching Experience
- I-8 Supervise Student Teachers

Category J: Coordination of Cooperative Education
- J-1 Establish Guidelines for Your Cooperative Vocational Program
- J-2 Manage the Attendance, Transfers, and Terminations of Co-op Students
- J-3 Enroll Students in Your Co-op Program
- J-4 Secure Training Stations for Your Co-op Program
- J-5 Place Co-op Students on the Job
- J-6 Develop the Training Ability of On-the-Job Instructors
- J-7 Coordinate On-the-Job Instruction
- J-8 Evaluate Co-op Students' On-the-Job Performance
- J-9 Prepare for Students' Related Instruction
- J-10 Supervise an Employer-Employee Appreciation Event

Category K: Implementing Competency-Based Education (CBE)
- K-1 Prepare Yourself for CBE
- K-2 Organize the Content for a CBE Program
- K-3 Organize Your Class and Lab to Install CBE
- K-4 Provide Instructional Materials for CBE
- K-5 Manage the Daily Routines of Your CBE Program
- K-6 Guide Your Students Through the CBE Program

Category L: Serving Students with Special/Exceptional Needs
- L-1 Prepare Yourself to Serve Exceptional Students
- L-2 Identify and Diagnose Exceptional Students
- L-3 Plan Instruction for Exceptional Students
- L-4 Provide Appropriate Instructional Materials for Exceptional Students
- L-5 Modify the Learning Environment for Exceptional Students
- L-6 Promote Peer Acceptance of Exceptional Students
- L-7 Use Instructional Techniques to Meet the Needs of Exceptional Students
- L-8 Improve Your Communication Skills
- L-9 Assess the Progress of Exceptional Students
- L-10 Counsel Exceptional Students with Personal-Social Problems
- L-11 Assist Exceptional Students in Developing Career Planning Skills
- L-12 Prepare Exceptional Students for Employability
- L-13 Promote Your Vocational Program with Exceptional Students

Category M: Assisting Students in Improving Their Basic Skills
- M-1 Assist Students in Achieving Basic Reading Skills
- M-2 Assist Students in Developing Technical Reading Skills
- M-3 Assist Students in Improving Their Writing Skills
- M-4 Assist Students in Improving Their Oral Communication Skills
- M-5 Assist Students in Improving Their Math Skills
- M-6 Assist Students in Improving Their Survival Skills

Category N: Teaching Adults
- N-1 Prepare to Work with Adult Learners
- N-2 Market an Adult Education Program
- N-3 Determine Individual Training Needs
- N-4 Plan Instruction for Adults
- N-5 Manage the Adult Instructional Process
- N-6 Evaluate the Performance of Adults

RELATED PUBLICATIONS

Student Guide to Using Performance-Based Teacher Education Materials
Resource Person Guide to Using Performance-Based Teacher Education Materials
Guide to the Implementation of Performance-Based Teacher Education
Performance-Based Teacher Education: The State of the Art. General Education and Vocational Education

For information regarding availability and prices of these materials contact—AAVIM, American Association for Vocational Instructional Materials, 120 Driftmier Engineering Center, University of Georgia, Athens, Georgia 30602, (404) 542-2586

BEST COPY AVAILABLE

ATTACHMENT B

OVERVIEW OF PROGRAM VITAL
Temple University

(For additional detail, contact Dr. Richard Adamsky, Associate Professor and Coordinator of Program VITAL, Temple University, Philadelphia, PA 19122. 215/787-6012; see also Bradley, Curtis H. "Program VITAL: Characteristics, Concepts and Derived Learning." Journal of Industrial Teacher Education. 16(1978): 57-66; Adamsky, Richard A. "VITAL-MIS: Managing Information in a PBTE Program." Journal of Industrial Teacher Education. 16(1978): 68-78.

PROGRAM VITAL (Vocational Intern Teaching Applied Learning) STRUCTURE

3 Senior Teacher Educators (full-time Temple Faculty Members) each work with

1 or more (total of 13.5) Field Resource Persons (full-time temporary Dean's appointments, rendering 40 hours/week) each working with

3 or more (total of 71) Resident Resource Persons (full-time inservice teachers at various secondary schools) each working with

1 or more (total of 230) Interns (full- or part-time inservice teachers seeking initial vocational certification)

Figures quoted are actual for 1978-1979 academic year. In addition to those individuals described above, the Program is supported by a Program Coordinator, Dr. Richard Adamsky, and a full-time staff trainer, working directly with the 13.5 Field Resource Persons on a weekly basis.

Program VITAL is supported by an effective VITAL-MIS (Management Information System) which allows for current accounting for the contacts made between/among each individual in the Program and the progress of each Intern on each module, including starting and completion dates, simulated or actual performance checkout situation, etc.

The initial vocational certification requires 15 Vocational Education credit hours, granted, in increments of 3, upon the completion of the following 30 modules:

B-1	Determine Needs and Interests of Students
B-2	Develop Student Performance Objectives
B-3	Develop a Unit of Instruction
B-4	Develop a Lesson Plan
B-5	Select Student Instructional Materials
B-6	Prepare Teacher-Made Instructional Materials
C-2	Conduct Group Discussions, Panel Discussions, and Symposiums
C-4	Direct Students in Instructing Other Students
C-6	Guide Student Study
C-7	Direct Student Laboratory Experience

C-8 Direct Students in Applying Problem-Solving Techniques
C-9 Employ the Project Method
C-10 Introduce a Lesson
C-11 Summarize a Lesson
C-12 Employ Oral Questioning Techniques
C-13 Employ Reinforcement Techniques
C-15 Present an Illustrated Talk
C-16 Demonstrate a Manipulative Skill
C-17 Demonstrate a Concept or Principle
C-21 Prepare Bulletin Boards and Exhibits

C-22 Present Information with Models, Real Objects, and Flannel Boards
C-23 Present Information with Overhead and Opaque Materials
C-29 Present Information with the Chalkboard and Flip Chart
D-1 Establish Student Performance Criteria
D-5 Determine Student Grades
E-5 Provide for Student Safety
E-8 Organize the Vocational Laboratory
E-9 Manage the Vocational Laboratory
G-7 Conduct an Open House
I-3 Develop an Active Personal Philosophy of Education

The final decision on an individual's competence to support the recommendation to the State Certification Office that temporary certification be granted is made by a Council of Educators. This consists of:

a. the chief school administrator of the school in which the intern (inservice teacher) is teaching,
b. a faculty member of that school elected by the faculty (usually the union representative), and
c. a Temple senior teacher educator (regular Temple faculty member). Temple has had success with using the Council because it involves appropriate others in the decision of the competence of individuals seeking the first teacher certificate.

ATTACHMENT C

PBTE AT THE UNIVESITY OF CENTRAL FLORIDA

Introduction

The Vocational Teacher Education Program at the University of Central Florida (UCF) is designed to provide professional training to teachers and prospective teachers in several occupational areas. The program is innovative and successful, taking the best principles of performance-based teacher education (PBTE) beyond the theoretical and hypothetical stage and installing them in a fully functioning training program. Because of its efficient organization and effective delivery of instruction, the program has received national and international recognition.

The present Vocational Teacher Education Program is comprised of Trade and Industrial and Health Occupations areas. Some 85 percent of those in the program are teachers already on the job, recruited directly from business, industry, and service occupations for the teaching profession. They enroll in the UCF program for their initial certification, and for undergraduate and graduate degrees. Because of the considerable geographic area to be covered, instruction is delivered in four locations: the main campus and three outlying campuses, between 20 and 55 miles away.

Program Model

The UCF model for vocational teacher training is designed around groups of research-identified teaching skills or competencies, selected and organized on the basis of their contribution to teacher success and proper sequence in fostering the teacher's professional growth. All of the university professional education courses, called "Competency Clusters," include a number of related competencies to be achieved. The cluster, "Essential Teaching Skills," designed to help beginning teachers survive in the profession, is the required first experience, but other clusters may be completed in any order depending on the individual teacher's needs.

The instructional program is organized into two phases: (1) the trainee achieves proficiency in all program competencies through the knowledge and practice level within a seminar setting; and (2) the trainee then demonstrates final competence in selected competencies in an actual teaching situation. Designated required competencies are achieved by every trainee on the basis of individual needs, interest, and job requirements. Criterion-based grades of A, B, or C are awarded to designate levels of teacher achievement; lower levels of performance are not recorded, nor is credit given.

Trainees may progress through a cluster at their own-best rate taking the time they need to achieve the required degree of proficiency. They may "test out" of a competency by demonstrating proficiency and meeting final assessment criteria at any time. The system, therefore, is highly time-efficient.

Instruction

There are three basic elements in the instructional program: the PBTE instructional module, seminar sessions devoted to discussion and practice of the skills involved in each module, and individualized instruction and counseling. Mainstays of instruction are the National Center's PBTE modules, though some additional modules unique to Florida's needs have been developed by UCF project staff. The modules are used as designed, with readings, teacher feedback, simulations, practice, and final performance all included. Additional materials (handouts, audiovisual materials, etc.) are used to support and enchance instruction. The UCF program involves none of the typical university instructional devices of quizzes, term papers, oral reports, or final examinations.

The weekly Cluster Seminar is vital to the achievement of the teacher and to the success of the program. Scheduled in advance, each seminar focuses on one specific module and its inherent competencies. Attendance is expected. In the seminar the teacher educator/resource person may provide enrichment or situation-specific materials, clarify ideas, answer questions, bring in additional resources, and/or observe and assess practice performances. Individual conferences are also held as needed to help teachers overcome specific obstacles to competency achievement.

Trainee Assessment

Teacher assessment takes place in two phases: in the seminar and in an actual teaching situation. As teachers work to achieve a competency within the seminar setting, they present a carefully specified performance (e.g., demonstrate a manipulative skill to a group of peers) or produce a specified product (e.g., develop a safety handbook for an occupational area) appropriate to the competency. The results are assessed by the teacher trainer (or "resource person") using a performance checklist with criteria known to the trainee. The product or performance must reach the Good or Excellent level, otherwise the trainee is recycled until that level is achieved.

Later, during the Directed Field Experience portion of the program, the trainee demonstrates the competencies in an actual teaching situation, usually involving his/her own students and class setting. Assessment of performance is done by school personnel (e.g., dean of instruction, supervisor, instructional specialist, or directing teacher) serving as field resource persons, with training and supervision provided by a university teacher educator.

Summmary

The performance-based Vocational Teacher Education Program at UCF is in full operation, and it has been thoroughly tested and refined. Benefits of the UCF approach, and the specific courses it contains, are quite clear. The program allows, in a way a conventional program could not, for the delivery of the right instructional program, at the right time for the trainee, and at the right place. Because it is constructed of the relatively small building blocks of competencies, the program is flexible, current, and readily revised to meet special training needs and situations. The UCF model is a feasible and practical one, transportable and adaptable to a wide range of school- and field-based settings.

ATTACHMENT D

PBTE WITHIN AN INSTITUTIONAL PROFESSIONAL DEVELOPMENT PLAN

At the Albuquerque Technical-Vocational Institute, PBTE concepts and materials are integrated into a total Professional Development Plan (PDP). Forty-one selected modules form the backbone of the instructional skills phase of the PDP. Proficiency in these modules is required of all persons hired as teachers but who have not completed a preservice teacher education program. The modules identified as critical are B-1, B-3, B-4, B-5, B-6, C-1, C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9, C-10, C-11, C-12, C-13, C-14, C-15, C-16, C-17, C-23, C-24, C-25, C-26, C-29, D-1, D-2, D-4, D-5, D-6, E-5, E-6, E-8, E-9, F-3, F-5, G-8, I-3, I-5. Other modules are used with teachers as needed to either develop or reinforce their skills. All of the modules have been coded as (1) required for beginning teachers or (2) additional work needed for certification purposes or for "master teacher" expectations.

The PBTE concepts and materials are being used in all vocational and technical programs of the Institute as well as in the "Preparatory" program, our program for students who need additional learning skills in order to function successfully in one of the training majors. Since there is no preservice requirement for hiring of teachers at the Institute, this program provides the basis for most of the teacher education experiences needed for the teacher to function successfully in the classroom. The delivery system for these initial teacher skills is a combination of formal course work and individual and/or group work on the modules with assistance from master teachers who serve as Field Resource Persons. Courses are taught jointly by professors from the Department of Secondary and Adult Education at the University of New Mexico (UNM) and leadership personnel from the Institute.

These resource persons are trained through inservice workshops developed by the Institute and involving personnel from UNM. The Institute maintains a professional services contract with Secondary and Adult Education that provides for a professor being on campus one day per week to assist with the PDP project.

The PDP, including this segment of teacher skills development, is administered through the regular administrative channels of the Institute. Additionally, there is a teacher assigned half-time as a Resource Specialist for the project to assist teachers with identifying the various activities that they might need or want to pursue. The specialist also works with administrators to assist them in aiding teachers in completing the various activities that have been agreed upon. The program utilizes Field Resource Persons--volunteer master teachers who receive PDP credit for their activities--to work one-on-one with teachers in training. A survey is taken regularly to determine who is willing to be a field resource person and/or with whom teachers would like to work as field resource persons. The program is self-paced, within the requirements of the Institute that the basic teaching skills modules be completed within the first two years of initial employment.

All of the skills learned are used in regular Institute classrooms and are verified by one of the resource persons working within the overall PDP activities. Records are kept on each person in their PDP file, indicating their accomplishments in the teaching skills area along with other activities and accomplishments resulting through the PDP.

The most difficult implementation problems experienced to date relate to the development and deployment of resource persons. This required some changes in Institute philosophy and practice in terms of responsibilities as well as in the deployment of personnel. These were dealt with most effectively through the use of an outside consultant, Jim Pollard from Spokane Community College, and a series of training workshops initiated as a result of his assistance.

The Teacher Resource Center houses all materials and media for the PDP, both purchased and internally developed materials. Of particular interest are some of the slide/tape programs that instructors have been developing in a variety of teaching skills areas, which are placed in the center. Each topic includes institutionally based requirements and teaching skills blended together, i.e., "How to Plan a Field Trip." This permits teachers who are working on the module of the same title to tie it directly into what happens at our Institute. Plans are underway to develop parallel materials for each of the "B" and "C" modules.

Further information may be obtained through:

Richard S. Rounds, Director, Day Division
Albuquerque Technical-Vocational Institute
Albuquerque, New Mexico 87106

ATTACHMENT E

ABSTRACT

PBTE Programs at Adelaide College of the Arts and Education in South Australia (1979-1981)

Models of operation. This college has several awards designed to develop the professional competencies required for teaching/training at the postsecondary level. Most students are already employed and study these awards part-time (inservice mode). Students are occupational instructors and adult educators in different post-high-school contexts (1) within the Adelaide metropolitan area, (2) in South Australian regional centers or at Darwin in the north of Australia, (3) within the training center of Bougainville Copper Ltd. in Papua New Guinea, or (4) scattered throughout Australia and Papua New Guinea.

Brief PBTE program descriptions. Since February 1979, PBTE has been used in the professional studies component (as distinct from liberal studies or technical studies) of three of these awards. Students complete so many modules (core and elective) to gain so many credits. Modules were selected to address those skills already nationally accredited within the traditional award.

The PBTE modules developed by The National Center for Research in Vocational Education (primarily those modules in Categories B, C, and D) are used as the primary base of instruction. Students purchase these materials.

The modules are supported by (1) Adelaide faculty counseling, (2) weekly group seminars, (3) written and audiovisual resources, (4) considerable peer-group interaction and practice teaching, (5) on-site resource person (advisor) guidance, (6) videotapes or audiotapes of users' own performance, and (7) student feedback.

Adelaide College faculty serve as the principal resource persons. Wherever possible, advisors--senior staff in the students' own work places--are also identified. PBTE training workshops are conducted for these advisors.

Assessment uses performance as the primary source of evidence of competency attainment. The modules' teacher performance assessment forms (TPAFs) are used. Adelaide College faculty are the sole assessors. Assessment is done either by observing performance during visits to "actual teaching situations" at the students' own work places or, in the case of external students, by viewing videotapes of performance (C modules) or written products (other modules). Students invite faculty to visit or mail material whenever they feel ready to demonstrate mastery.

Each student has a competency profile sheet (displaying the 100 modules) and a personal progress record, which is signed--along with the relevant TPAF--by the resource person whenever a competency has been mastered. The department maintains a folder for each student; a black-colored corner of a module square on the competency profile sheet indicates a required module, and a cross over the whole module square signifies completion.

Rate of progress is determined by demonstrated competency. A student continues into the next term if the specified number of competencies has not been completed. However, on-campus students are strongly exhorted, within their more structured program of weekly seminars, to complete the year's program within the year if at all possible.

Completion of a course (a cluster of four to six modules) is registered on college computer forms by means of the term satisfactory.

Special areas. The following areas still need to be resolved or consolidated:

- Identifying, training, retaining, and enthusing advisors--We talk in terms of triads: resource person, advisor, and student. These groups of three must coordinate effectively in the development of the student's instructional competencies.
- Acquiring local resources--Accumulation of local materials to supplement the American modules is a gradual (and slow) process.
- Establishing a grading system--Some students want to be recognized for special efforts, and it may be that we will experiment with some form of grading system that allows this.
- Verifying competencies--The department conducted a competency verification study (based largely on Cotrell's list) early in 1981. This research will give the program a firmer base.
- Convincing significant others--The need exists for more encouragement, persuasion, demonstration of the program's effectiveness, and research. This constitutes our major challenge at this stage, not only within Adelaide College and the South Australian further education system, but across the whole of Australia in both educational and industrial contexts.

Our major success. The Bougainville PBTE program has been our most noteworthy success and is unique in Australia as (1) a program adhering to all the principles of PBTE, (2) an approach to staff development of industry trainers by a teacher education department, and (3) an educational or training endeavor that necessarily must occur in an off-campus mode and at a distance (i.e., an outreach program).

Dr. Roger Harris
Centre for Studies in Adult and Further Education
South Australian College of Advanced Education
Holbrooks Road
Underdale, South Australia 5032

(08) 352-0011

ATTACHMENT F

THE NATIONAL OCCUPATION COMPETENCY TESTING PROGRAM AT UCF

The University of Central Florida (UCF) has been established as an Area Test Center for the administration of teacher tests for the National Occupational Competency Testing Institute (NOCTI). The NOCTI examination is required for the industrial/technical specialization in vocational education at UCF. Other purposes for which NOCTI may be used include qualifying work experience alternative for initial teacher certification and academic hours toward the advanced vocational certificate.

The NOCTI examinations are developed by skilled tradespeople and test development specialists from every part of the nation. Each examination is reviewed by experienced craftspersons, then revised and pilot tested in the Area Test Centers throughout the nation. Competent people from each occupational area and candidates who have taken the examinations judge them to be fair, comprehensive samplings of the knowledge and skills in the occupation. The NOCTI examinations enable tradespeople to demonstrate the knowledge and skills they have acquired on the job.

Each of the NOCTI examinations has two parts: a written test that measures knowledge of the occupational area, and a performance test that measures skills in performing tasks typical of that occupation. Candidates must take both parts. If possible, both parts of the occupational examination will be scheduled for the same day--usually a Saturday. Whether this can be done depends on how long the particular examination takes. Typically the written test takes approximately three hours and the performance test three to six hours. If the performance part is too long, it will be scheduled on another day.

To prepare for the NOCTI examination, candidates should contact the Area Test Center Coordinator to obtain the SCOPE for the particular occupation. The SCOPE is a document that outlines what the test covers and lists the tools, references, materials, etc., that will be used in the test. In addition, a review of the SCOPE will provide an understanding of the occupational content of the written part and the manipulative skills that must be demonstrated in the performance part of the test.

The cost of the NOCTI examination is $250.00. This is a bargain considering the cost of 30 Semester Hours in the State University System. These charges are used to reimburse: (1) National Occupatinal Testing Institute for the cost of the test and scoring; (2) local school systems for the cost of facilities, materials, and supplies; (3) vocational-technical instructors for monitoring the performance section of the examination; and (4) other costs of test administration. Two score reports are included in the cost of the examination. Additional reports may be obtained for a nominal fee.

NOCTI examinations will be offered throughout the year. Inquiries should be made to the vocational faculty at the University of Central Florida. Registration and testing arrangements will be made by the coordinator of the Occupational Competency Testing Center.

ATTACHMENT G

COMPETENCY-BASED VOCATIONAL EDUCATION ADMINISTRATOR MODULE SERIES

MODULE NUMBER — TITLE OF MODULE

CATEGORY A: PROGRAM PLANNING, DEVELOPMENT, AND EVALUATION

LT-A-1 Develop Local Plans for Vocational Education: Part I
LT-A-2 Develop Local Plans for Vocational Education: Part II
LT-A-3 Direct Program Evaluation

CATEGORY B: INSTRUCTIONAL MANAGEMENT

LT-B-1 Direct Curriculum Development
LT-B-2 Guide the Development and Improvement of Instruction
LT-B-3 Manage the Development of Master Schedules
LT-B-4 Prepare to Install CBAE
LT-B-5 Establish and Refine the CBAE Program

CATEGORY C: STUDENT SERVICES

LT-C-1 Manage Student Recruitment and Admissions
LT-C-2 Provide Systematic Guidance Services
LT-C-3 Maintain School Discipline
LT-C-4 Establish a Student Placement Service and Coordinate Follow-up Studies

CATEGORY D: PERSONNEL MANAGEMENT

LT-D-1 Select School Personnel
LT-D-2 Supervise Vocational Education Personnel
LT-D-3 Evaluate Staff Performance
LT-D-4 Manage School Personnel Affairs

CATEGORY E: PROFESSIONAL AND STAFF DEVELOPMENT

LT-E-1 Appraise the Personnel Development Needs of Vocational Teachers
LT-E-2 Provide a Staff Development Program
LT-E-3 Plan for Your Professional Development

CATEGORY F: SCHOOL-COMMUNITY RELATIONS

LT-F-1 Organize and Work with a Local Vocational Education Advisory Council
LT-F-2 Promote the Vocational Education Program
LT-F-3 Involve the Community in Vocational Education
LT-F-4 Cooperate with Governmental and Community Agencies

CATEGORY G: FACILITIES AND EQUIPMENT MANAGEMENT

LT-G-1 Provide Buildings and Equipment for Vocational Education
LT-G-2 Manage Vocational Buildings and Equipment
LT-G-3 Manage the Purchase of Equipment, Supplies and Insurance

CATEGORY H: BUSINESS AND FINANCIAL MANAGEMENT

LT-H-1 Prepare Vocational Education Budgets
LT-H-2 Identify Financial Resources for Vocational Education
LT-H-3 Develop Applications and Proposals for Funding Vocational Education

Sponsored by: U.S. Office of Education and the following state departments of education: Arizona, Florida, Kansas, Illinois, Michigan, Ohio, New York, North Carolina, Pennsylvania, Texas, Arkansas, New Mexico, Colorado, and Massachusetts.

CATEGORY I: PROGRAM IMPROVEMENT

LT-I-1 Use Information Resources to Help Improve Vocational Education Programs
LT-I-2 Use Inquiry Skills to Help Improve Vocational Education Programs

CATEGORY J: LINKAGE WITH BIL/GH

LT-J-1 Develop a Linkage Plan
LT-J-2 Establish Linkages with BIL/GH
LT-J-3 Provide Customized Training Programs for BIL/GH
A Guide to Linkage in Action: Selected Models
Linkage is...A Guide for Board Members
Linkage is...A Guide for BIL/GH

SUPPORTIVE MATERIALS

CBAE

Guide to Vocational-Technical Education Program Alternatives: Secondary and Postsecondary - An Introduction

Guide to Using Competency-Based Vocational Education Administrator Materials

Resource Person's Guide to Implementing Competency-Based Administrator Education Concepts and Materials

Vocational Administrator Competency Profile - Pad of 50 Individualized Record Sheets

An Introduction to Competency-Based Administrator Education (slide/audiotape)

Optional Supplementary Print and Audiovisual Resources Suggested for the CBAE Modules (bibliography)

Improving the Basic Skills of Vocational-Technical Students: An Administrator's Guide

Updating the Technical Skills of Occupational Instructors: An Administrator's Guide

Recruitment and Inservice Training of Nondegreed Teachers: An Administrator's Guide

Integration of Academic and Vocational-Technical Education: An Administrator's Guide

Guide to the Administration of Adult Vocational Education

Developed by:

THE NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 KENNY ROAD · COLUMBUS, OHIO 43210

Published by:

AAVIM
AMERICAN ASSOCIATION FOR VOCATIONAL INSTRUCTIONAL MATERIALS
Drillmier Engineering Center
University of Georgia